

Re: Beam me up – trying to get a basic understanding of GR

Source: <http://sci.tech–archive.net/Archive/sci.physics.relativity/2005–05/msg00236.html>

- *From:* "Bill Hobba" <bhobba@xxxxxxxxxxxxxxxx>
 - *Date:* Thu, 05 May 2005 02:08:57 GMT
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"Curious" <anthonyroseuk–curious@xxxxxxxxxxxx> wrote in message
news:1115220928.517600.180750@xx

> Dirk,

>

> Thanks again for your input.

> I'm ending my participation in this thread for two reasons.

> 1. Your point about raising only one question at a time is practical,

> (thanks), no matter how closely they all relate, because every one

> seems to have their own version on everything in relativity.

I would like to see examples of that assertion.

> 2. It seems to me that you are not really paying attention to the

> issues being raised. This will only lead to an ever–increasing

> multiplicity of sub–topics and confusion.

> (If you are interested, here are examples:

> a. I spoke of "proving an absolute frame of reference".

> You call it babble if proven philosophically (this shows me you can't

> think logically in the empirical sense of the word)

> and relate it to proving the existence of god (an uncalled–for

> distraction, and an unverified refutation arrived by a summary

> judgement without hearing the case).

Proving an absolute frame of reference is babble until you can back it up by an experiment whose only reasonable interpretation is an in principle absolute frame of reference. An example of that would be, for example, a positive result on the Kennedy Thorndike experiment. It was not conceded that atoms existed until the turn of the last century when Einstein and others produced evidence that could not be explained any other way. Prior to that the evidence for atoms was much stronger than the evidence of an absolute frame – yet scientists still did not say they existed for sure.

> I can't resist pointing out here that if you take the premises of a

> theory and logically prove them to lead to a contradiction then that

> theory cannot be true in its stated form. That's philosophy, and it is

> as or more powerful than direct experiment.

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Philosophy is not the only discipline reliant on logic and its foundations – mathematics does as well. It has been proven that both SR and GR are as consistent as Euclidian geometry.

- > b. I spoke of time dilation "in actual fact".
- > You answered by talking about the optical illusion of perspective.
- > (Nuff said.)
- > c. I spoke of time dilation in appearance only.
- > You then state I clearly do not know SR/GR. (You cannot see that I'm
- > raising opposites (actual vs apparent), therefore I cannot believe
- > both.)
- > The only reason I mentioned time dilation in appearance was because of
- > your earlier reply to the effect that "Time dilation does not explain
- > the constancy of the speed of light. Time dilation is one of the
- > consequences of the way we measure..." A 'consequence of the way we
- > measure' implies that it is an illusion arising from a method.

Your logic is clearly erroneous. First you need to demonstrate that other methods exist, are reasonable, and do not give rise to the predictions of SR. What Dirk was alluding to is it is a consequence of any reasonable method. In fact the derivation of the Lorentz transformation does not rely on any particular method – see for example the following:

<http://arxiv.org/abs/physics/0110076>,

and ancient, but I still think excellent post by Tom Roberts

<http://groups.google.com/groups?hl=en&lr=&c2coff=1&selm=54jfst%24g1p%40ssbunews.ih.lucent.com>

and chapter 10 of

<http://www.courses.fas.harvard.edu/~phys16/Textbook/>

under the heading of Relativity without c.

- > Either
- > time dilates, whether or not we measure it, or it only appears to
- > dilate when we examine it from a certain point of view.

In physics time is defined as what a clock reads. Thus separating time from measurement is not possible in principle. A discussion (written by a philosopher) on how physicists think about philosophical issues such as what is time etc can be found here – <http://www.friesian.com/feynman.htm>.

Note what it says:

'Now, one might ask, What is "mass"? What is "distance"? What is "time"? As questions of physics these are going to be very different from similar questions in philosophy. In physics, all one need say, to get started, is that "mass resists acceleration" (inertial mass) or "mass exerts gravitational attraction" (gravitational mass), that "distance is what we measure with this rod," and that "time is what we measure with this clock." Wow. These answers, of course, are not philosophically very satisfying. They are all one needs, however, to start doing the science. And there is a reason for that. Scientific explanations are logically only sufficient, not necessary, to the phenomena. This means that they are enough to explain something about what we are seeing, but that logically they are not the only

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possible explanation and they do not explain everything about what we are seeing. Indeed, explaining everything is a tall order, though it is what, philosophically, we would like ultimately to have.'

- > Rhetorically, could you state categorically which you believe:
- > a. Time actually dilates at speed
- > b. Time does not actually dilate at speed.

To answer questions like the above you need to be precise about what you mean by 'at speed'. In relativity experience has taught us to express things in terms of invariants. Speed is not an invariant. If you mean a clock moving relative to a stationary clock measures different intervals than the stationary one – then yes. But that is simply a property of space–time – nothing to do with what happens to the clock. Or to be precise that is what SR says. LET is also a valid theory and it predicts the cause is interaction with an aether.

- > Well, thanks for your sincere input, but please know that I've had a
- > sufficiency. Sorry for being blunt but I have come to believe in saying
- > it like I see it when an answer is required.
- > Guess you're going to have to lump me with the cranks!
- > Future queries of mine will be more focussed – ta.

Thanks
Bill

• **References:**

- ◆ ***Beam me up – trying to get a basic understanding of GR***
◇ From: Curious
- ◆ ***Re: Beam me up – trying to get a basic understanding of GR***
◇ From: anthonyroseuk–curious
- ◆ ***Re: Beam me up – trying to get a basic understanding of GR***
◇ From: Dirk Van de moortel
- ◆ ***Re: Beam me up – trying to get a basic understanding of GR***
◇ From: Curious

- Prev by Date: ***Re: O'Barr & Jupiter's revolving moons***
- Next by Date: ***Re: Bending of light not well authenticated***
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